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Title : AGE STRUCTURE AND GROWTH OF FEMALE EASTERN AND WHITEBELLY SPINNER DOLPHINS INCIDENTALLY KILLED IN THE EASTERN TROPICAL PACIFIC TUNA PURSE-SEINE FISHERY

Category : Conservation

Student : Not Applicable

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Abstract : Knowing the age structure of animals incidentally killed in a fishery facilitates the assessment of potential impacts of the takes on the population's dynamics. Samples were collected from dolphins incidentally killed in the eastern tropical Pacific tuna purse-seine fishery between 1970 and 1982. This study is much larger than previous studies of 250 eastern (Perrin et. al., 1977) and 232 northern whitebelly (Perrin et. al., 1984) spinner dolphins and includes the whitebelly spinners south of the equator which were not included in previous age studies. Age was estimated for 1,342 female eastern spinner dolphins (*Stenella longirostris orientalis*) and 1,085 female whitebelly spinner dolphins (*Stenella longirostris longirostris*) by examining dentinal growth layer groups interpreted by two readers. The whitebelly data included specimens occupying different habitats with 836 collected from north of the equator and 247 from south of the equator. Maximum ages estimated were 24.5 years and 26 years for eastern and whitebelly dolphins respectively. The observed age frequency distribution was found to be significantly different from an expected stable age distribution for both subspecies with 0-1 year olds, in particular, under-represented by a factor of 2 for eastern and a factor of 2.5 for whitebelly spinner dolphins. Growth curves were fit to age-length data for each subspecies using the Laird/Gompertz model with length at birth of 76.9cm and 75.9cm for eastern and whitebelly spinners respectively. Calculated lengths at 1 and 2 years of age were 117 cm and 142 cm for eastern spinners and 118 cm and 145 cm for whitebelly spinners. The mean length of sexually mature animals (those whose ovaries contained at least one corpus of ovulation) was 171.5 cm (SE = 0.26, range 152-193) and 176.3 cm (SE=0.32, range 157-198) for eastern and whitebelly spinner dolphins.